

PROCEEDINGS
OF THE
AMERICAN ACADEMY
OF
ARTS AND SCIENCES.

VOL. XXXIX.

FROM JUNE, 1903, TO JUNE, 1904.



BOSTON:
PUBLISHED BY THE ACADEMY.
1904.

University Press:
JOHN WILSON AND SON, CAMBRIDGE, U.S.A.

C O N T E N T S.

	P A G E
I. <i>The Changeable Hydrolytic Equilibrium of Dissolved Chromic Sulphate.</i> BY THEODORE WILLIAM RICHARDS AND FREDERIC BONNET, JR.	1
II. <i>On the Prolongation of Spectral Lines.</i> BY THEODORE LYMAN	31
III. <i>An Explanation of the False Spectra from Diffraction Gratings.</i> BY THEODORE LYMAN	37
IV. <i>The Anomalous Dispersion, Absorption, and Surface Color of Nitroso-dimethyl-aniline.</i> BY R. W. WOOD	49
V. <i>New and otherwise Noteworthy Angiosperms from Mexico and Central America.</i> BY J. M. GREENMAN	67
VI. <i>Quantitative Studies in the Evolution of Pecten.—III. Comparison of Pecten opercularis from three Localities of the British Isles.</i> BY C. B. DAVENPORT	121
VII. <i>The Electrical Conductivity of Aqueous Solutions at High Temperatures. I.—Description of the Apparatus. Results with Sodium and Potassium Chloride up to 306°.</i> BY ARTHUR A. NOYES AND WILLIAM D. COOLIDGE	161
VIII. <i>The Laws of Heredity of Galton and Mendel, and some Laws governing Race Improvement by Selection.</i> BY W. E. CASTLE	221
IX. <i>A Revision of the Atomic Weight of Iron. Second Paper.—The Analysis of Ferrous Bromide.</i> BY GREGORY PAUL BAXTER	243
X. <i>The Color Changes in the Skin of the so-called Florida Chameleon, Anolis carolinensis Cuv.</i> BY FRANK C. CARLTON	257

129485

	PAGE
XI. <i>A Revision of the Genus Flaveria.</i> BY J. R. JOHNSTON	277
XII. <i>On the Lines of Certain Classes of Solenoidal or Lamellar Vectors, Symmetrical with Respect to an Axis.</i> BY B. O. PEIRCE	293
XIII. <i>On the Real Automorphic Linear Transformation of a Real Bilinear Form.</i> BY HENRY TABER	305
XIV. <i>Influence of Occluded Hydrogen on the Electrical Resistance of Palladium.</i> BY W. E. McELFRESH	321
XV. <i>Experiments on the Deviations of Falling Bodies.</i> BY EDWIN H. HALL	337
XVI. <i>On the Relation of the Hall Effect to the Current Density in Gold.</i> BY THOMAS C. MCKAY	351
XVII. <i>On Generalized Space Differentiation of the Second Order.</i> BY B. O. PEIRCE	375
XVIII. <i>On the Cooper Hewitt Mercury Interrupter.</i> BY GEORGE W. PIERCE	387
XIX. <i>Edge Corrections in the Calculation of the Absolute Capacity of Condensers.</i> BY J. G. COFFIN	413
XX. <i>Metabolism and Division in Protozoa.</i> BY AMOS W. PETERS .	439
XXI. <i>Spectra from the Wehnelt Interrupter.</i> BY HARRY W. MORSE	517
XXII. <i>Studies on the Transformations of Saturnian Moths, with Notes on the Life-History and Affinities of Brahmaea japonica.</i> BY ALPHEUS S. PACKARD	545
XXIII. <i>The Significance of Changing Atomic Volume. IV.—The Effects of Chemical and Cohesive Internal Pressure.</i> BY THEODORE WILLIAM RICHARDS	579
RECORDS OF MEETINGS	607
REPORT OF THE COUNCIL	627

CONTENTS.

v

	PAGE
BIOGRAPHICAL NOTICES	627
Horace Gray	627
William Sumner Appleton	638
James Elliot Cabot	649
Alfred Perkins Rockwell	655
Horatio Hollis Hunnewell	656
<hr/>	
OFFICERS AND COMMITTEES FOR 1904-05	659
LIST OF THE FELLOWS AND FOREIGN HONORARY MEMBERS	661
STATUTES AND STANDING VOTES	669
RUMFORD PREMIUM	679
INDEX	681